tend below the rail base without coming tn contact with it or passing beneath its edges, and having one or more bolt holes at a point below the level of said rail base, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified. 3rd. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b adapted to fit beneath the head of the rail, and provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, and a downwardly-extending flange b^2 shorter than the flange b, adapted to extend below the rail base without coming in contact with it or passing beneath its edges, and having one or more bolt-holes at a point below the level of said rail base, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified 4th. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b adapted to fit beneath the head of the rail, and provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, a downwardly-extending flange b^3, shorter than the flange b, adapted to extend below the rail base without coming in contact with it, and having one or more bolt-holes at a point below the level of said rail-base, and a web b^4 connecting the flanges b and b^1, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified. 5th. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b having projections b^5 adapted to fit beneath the head of the rail at the centre, and the ends of the flange, said upwardly-extending flange being provided with bolt-holes, an outwardly extending flange b^1 adapted to lie along and extend beyond the rail base, and a downwardly-extending flange b^3 shorter than the flange b, adapted to extend below the rail base without coming in contact with it, and having one or more bolt-holes at a point below the level of said rail base, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified. 6th. As a new article of manufacture, a railway fish-plate having an upwardly-extending flange b having projections b^5, adapted to fit beneath the head of the rail at the centre, and the ends of the flange, said upwardly-extending flange being provided with bolt-holes, an outwardly-extending flange b^1 adapted to lie along and extend beyond the rail base, a downwardly-extending flange b^2 shorter than the flange b, adapted to extend below the rail base without coming in contact with it, and having one or more bolt-holes at a point below the level of said rail base, and a web b^4 connecting the flanges b and b^1, all substantially as described, and so as to form with a similar plate a rail joint of the kind specified.

No. 32,514. Pipe Elbow. (*Coude de tuyau.*)

Charles B. Cooper, New York, N. Y., U. S., 15th October, 1889; 5 years.

Claim.—1st. A curved pipe elbow consisting of a series of transverse sections, each formed of a single blank, one end or edge of each section being formed with an annular corrugation, said corrugation and the opposite end of the section being provided with transverse indentations, whereby, when the sections are secured together, the straight edge of the section fits on the corrugation of the next and the indentations intermesh, substantially as described. 2nd. A curved pipe elbow consisting of transverse sections concave at the throat and convex at the back, each formed of a single blank having its ends secured together, said sections being secured together at their ends, and the two end sections at about half their length departed from a curved form and made straight or tapering, for the purpose set forth. 3rd. A curved pipe elbow consisting of transverse sections concave at the throat, and convex on the back, each formed of a single blank having its ends secured together with matched grooves allowing the sections to revolve on their circumference, and the two end sections at about one-half their length departing from a curved form and made straight or tapering, for the purpose set forth. 4th. A sheet metal sectional curved elbow made in two or more transverse sections, the walls of which are made concave in the throat and convex on the back, and held together by the use of indentations made in the walls of the sections, where they lap on one another when jointed, and also by soldering, substantially as described. 5th. A sheet metal sectional curved elbow made in two or more transverse sections, with one or both end sections conforming part of their length to the arc of the corresponding section to which it is joined, and the other part of their length departed from the arc and made tapered or of the shape of a plain straight tube. 6th. A sheet metal sectional curved elbow made in two or more transverse sections, the walls of which are made concave in the throat, convex on the back, and which are joined or locked together with the seam made by joining such sections formed on the inside walls below the plane of the external surface of sections of such elbows, whereby the convex curve of the outer wall is continuous. 7th. A transverse curved elbow section convex on the back and concave at the throat, and formed from a flat blank tapering towards the ends and bent into circular form with the ends overlapping and secured together, anp the edges of the sections grooved.

No. 32,515. Butter Package.

(*Vaisseau pour le beurre.*)

Gilbert W. Bradley, Sunderland, Vt., U.S., 15th October, 1889; 5 years.

Claim.—1st. As an improved cover for cylindrical butter packages, a thin wooden disk, held in a flute or crease in a flanged metallic band by means of spurs which are struck up out of the material of the cylindrical portion of such band and are bent down internally against the under side of the disk, substantially in the manner described and set forth. 2nd. A metallic band for use in the manufacture of cylindrical packages or boxes, wherein a bent hoop is used for the body or walls, and thin disks are used for tops and bottoms or for covers thereof, provided with longitudinal struck up spurs at one end of such bands, and perforations at the opposite end thereof as means for uniting the ends of such bands and having a crease and flange to receive the edge of the disk, and a series of transverse struck up spurs adapted to be either bent down over the edge of the disk to confine the same within the band or to have their points bent and driven through the body of the package, as a provision for attaching the band either to the cover disk or to the hoop of the box, as described and set forth. 3rd. A metallic band for use in the manufacture of packages of the character described, provided with an annular crease for the reception of the edge of the disk-head and series of transverse struck up points or spurs, whereby the band may be connected with said disk to form a cover for a box or may be used as a hoop to confine the bottom to the body of the box itself, substantially as described and for the purposes set forth. 4th. A cylindrical package having a thin body part made of thin bent veneer, and a cover consisting of a thin disk held in a flanged and creased metallic band by means of struck up spurs bent down, as shown, in combination with a hook or staple h which catches into the gap left after the bending down of the spur by one leg of the staple and penetrates the wall of the box with the other leg, substantially as described and for the purpose set forth. 5th. A butter package consisting of a bent veneer body having the bottom held by a creased and flanged metallic band, the body and band being united by rivets and having a bent veneer lining, in combination with a cover consisting of a thin disk held in a flanged creased metallic band by means of spurs struck out of the material of the band and folded down upon the inner surface of the said disk, substantially in the manner described and for the purpose set forth. 6th. A metallic band for attaching the disk bottom of a cylindrical bent veneer box to the body thereof, provided with an annular crease to receive the edge of the disk bottom having transverse struck up points or spurs, the points of which may be bent at right angles with the roots of the spurs for the purpose of forcing them through the walls of the box, substantially as described and for the purposes set forth. 7th. A butter package consisting of an external wall of thin veneer having a bottom attached thereto by a crease and flanged metallic band, and provided with a lining of thin veneer curved to fit the wall of the package, substantially as described and for purposes set forth. 8th. A cylindrical butter package, the wall of which is of wood veneer having its overlapped ends united by sewing, and its bottom attached and held in position by a creased and flanged metallic band, substantially as shown, and provided with a cover consisting of a disk top confined in a similar creased and flanged metal band, substantially as specified.

No. 32,516. Rotary Engine. (*Machine rotative.*)

Marcellus A. Buford, Thompson's Station, Tenn., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a rotary engine, the combination, with a casing provided with a steam inlet chamber and steam exhaust chambers, of a main driving shaft mounted to rotate in the said casing, and a wheel secured on the said shaft in the said casing, and provided with central disks having inlet openings in their peripheries, and exhaust disks secured to the central disks and provided with outlet openings discharged into the said exhaust chambers, substantially as shown and described. 2nd. In a rotary engine, the combination, with the casing A provided with the walls, D and D^1 forming the chambers F and F_1, of the main driving shaft B mounted to rotate in the said casing, the wheel C secured on the said driving shaft and provided with the disks I, I^1, each having the spokes 13 and inlet openings 12 in its periphery, said wheel being also provided with the exhaust disks J and J^1, having spokes J^3, and exhaust disks J^2 registering with channels formed in the walls D and D^1, substantially as shown and described. 3rd. In a rotary engine, a casing, partition walls formed in the said casing and provided with channels leading into the outer chambers formed by the said partition walls, an inlet pipe leading to the central chamber formed by the said partition walls, and exhaust pipes leading from the outlet chambers formed by the said partition walls, in combination with the main driving shaft mounted to rotate centrally in the said casing, the disks I and I^1, secured on the said main driving shaft between the said partition walls, each disk being provided with spokes and inlet openings extending from the periphery through the said spokes, and exhaust disks secured on the said main driving shaft and abutting against the outer spaces of the said disks I and I^1, said exhaust disks being fitted in the said partition walls D and D^1, and provided with spokes, and exhaust openings in the periphery, said openings registering alternately with the channels in the partition walls, substantially as shown and described.

No. 32,517. Adjustable Grate Blower Handle. (*Manche mobile de rideau de foyer.*)

Joseph A. Côté, Ottawa, Ont., 15th October, 1889; 5 years.

Claim.—The handle B having a U-shaped end A fitted to it, forged or cast as shown, for the purposes described.

No. 32,518. Car Truck. (*Châssis de char.*)

William H. H. Sisum, Brooklyn, N.Y., U.S., 15th October, 1889; 5 years.

Claim.—1st. In a car truck, the combination, with side frames provided with bearings, of a bolster made in three parts, comprising upper, middle, and lower parts, and springs arranged in pairs between the lower and middle parts, and other springs arranged in pairs between the middle and upper parts, substantially as specified. 2nd. In a car truck, the combination, with side frames provided with bearings for three pairs of wheels, of two bolsters connected together and severally composed of three parts comprising an upper, a central and a lower part, springs arranged between the lower and middle parts of each of said bolsters, and springs arranged between the middle and upper parts of each bolster, substantially as specified. 3rd. In a car truck, the combination, with frames provided with bearings, of a bolster comprising an upper, a middle and a lower beam, spiral springs arranged near the ends between the lower and middle beams, and other spiral springs between the middle and upper beams, substantially as specified. 4th. In a car truck, the bolster comprising the upper, the middle and the lower portions extending